

REMARKS

This amendment is in response to the Official Action mailed July 21, 2003. In the present paper, Applicant has amended claims 21 and 22. Claims 3-10 and 13-22 are now presented for the Examiner's consideration in view of the following remarks:

The Examiner has rejected all claims in the present application under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,324,184 to Hou et al. (Hou) in view of U.S. Patent No. 6,377,548 to Chuah (Chuah) and further in view of U.S. Patent No. 6,072,773 to Fichou (Fichou).

The Present Application

The present application is directed to a system and method for regulating traffic in a network. A portion of the total network transmission capacity is made unavailable, and thereby held as reserve capacity. The reserve capacity is not "reserved" for a particular network connection, but is instead created as an uncommitted percentage of maximum capacity so that it can be released when appropriate to regulate network traffic. The technique does not change the access protocols associated with any of the connections (present spec., p. 2, lines 19-25).

The reserve capacity is made unavailable to end users by blocking those end users from gaining access to the network. That is done by asserting a traffic regulation signal in a channel of the network. That traffic regulation signal functions within the existing access protocols. For example, Fig. 5 of the present application shows the assertion of a traffic regulation signal 410 on a timeline 404 of a signaling channel. Assertion of that signal makes the time period 412 on the communication channel timeline 402 unavailable (spec., p. 5, lines 12-18).

One advantage of the presently claimed system is that it can implemented over networks with pre-existing network traffic control techniques that rely on network access protocol features such as assigning priorities, adjusting collision back-off delays, and dedicating pre-assigned channels. The reserve capacity technique of the presently claimed invention can overlay those media access mechanisms without the inherent complexities of integrating with those systems (spec., p. 1, lines 6-10; p. 2, lines 12-25). Examples of media access mechanisms that can be overlaid by the presently claimed invention include those disclosed in Hou and in Fichou.

Amended claim 21 is an exemplary claim directed to a method according to the invention. That claim is directed to a method for regulating traffic in a network. The network includes connections having associated access protocols. The method includes the step of making unavailable an amount of network transmission capacity as reserve capacity, by blocking end-users from gaining access to the network by asserting a traffic regulation signal in a channel of the network. The traffic regulation signal functions within the connection access protocols. The method also includes the step of adjusting the amount of reserve capacity based on a desired network performance.

The Hou Patent

Hou discloses a method for dynamically allocating bandwidth among a plurality of subscriber units in an upstream channel of a communication network such as a hybrid fiber coax (HFC) cable television system. The Examiner points to Hou for the use of media access controllers for making unavailable media transmission capacity (Hou, col. 5, lines 47-50). As the Examiner notes, however, Hou fails to disclose blocking end users from gaining access to the network by asserting a traffic regulation signal in a channel of the network, and adjusting the

amount of reserve capacity based on a desired network performance. Applicant submits that Hou furthermore does not teach the added limitation of claims 20 and 21 requiring the traffic regulation signal to function within the access protocols.

The Fichou Patent

Fichou discloses a “call admission control” procedure for regulating traffic in a high speed network by determining whether or not to accept a particular network connection (Fichou, col. 7, lines 59-62; col. 9, lines 5-18). The decision whether or not to accept a particular connection (call) in the network is based on the characteristics of a particular user’s expected traffic: peak rate, mean rate and burst length (col. 8, lines 31-67).

The “call admission control procedure” pointed to by the Examiner is a connection access protocol. The technique of the present invention is intended to overlay such a protocol without changing it. Applicant submits that Fichou is directed to the determination of whether to accept an individual connection based on QoS and other criteria, and not to the creation of reserve network transmission capacity, as required by claims 21 and 22.

The Amended Claims Are Not Obvious Over Hou in View of Fichou

Applicants submit that amended independent claim 21 is patentable at least because the art of record neither teaches nor suggests a method in a network having connections with associated access protocols, the method including the step of “making unavailable an amount of network transmission capacity . . . by asserting a traffic regulation signal . . . said traffic regulation signal functioning within the access protocols.” That arrangement permits overlaying

of the bandwidth reservation system of the present invention on existing networks having complex access protocols already in place, without introducing additional complexity.

The Examiner does not identify exactly which reference is relied upon for disclosing the step of asserting a traffic regulation signal; for purposes of this paper, Applicants will assume that Fichou is cited for that purpose. The system described in Fichou, however, is itself an access protocol associated with a connection. The present invention is designed to overlay a system like the Fichou system without introducing additional complexity, by asserting traffic regulation signals that function within the access protocols. Claims 21 and 22 have been amended to make clear that aspect of the invention.

For at least those reasons, Applicants respectfully submit that amended claim 21 is patentable over the art cited by the Examiner. System claim 22 has also been amended to contain similar limitations, and is asserted to be patentable for the same reasons.

Dependent Claims Not Anticipated

Applicants respectfully assert that dependent claims 3-10 and 13-20 are patentable because they depend from claims 21 and 22, respectively, and therefore incorporate the limitations of those claims. Applicants further traverse the Examiner's rejection of those claims for the following additional reasons.

As to claims 4 and 14, the Examiner asserts that those claims are unpatentable over Hou in view of Fichou. A basic advance of the present invention over systems such as those disclosed in Hou and Fichou is that the traffic regulation system of the present invention is able to function as an overlay to systems such as the Hou and Fichou systems, without inheriting the complexity of the inherent media access protocol of those systems (spec., p. 1, lines 7-10).

Claims 4 and 14 are directed to that aspect of the invention, wherein the traffic regulation signal of the invention is consistent with the native access control protocol of the network. In Hou and Fichou, there is no separate "traffic regulation control signal" to be "consistent with the protocol" as claimed in claims 4 and 14.

Conclusion

Applicants therefore submit that none of the claims presented in the case are anticipated by or obvious over the relevant art, and assert that claims 3-10 and 13-21 are now in condition for allowance. Applicants earnestly request that the Examiner issue a Notice of Allowance.

Should the Examiner have any questions regarding the present case, the Examiner should not hesitate to contact the undersigned at the number provided below.

Respectfully,

By


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